Amendments to the Claims:

1.   (previously amended)   A method of generating a start of packet synchronization sequence for use in a transmitter, said method comprising the steps of:

   generating a plurality of N symbols to be transmitted in said synchronization sequence, wherein N is a positive integer;

   generating N-1 predetermined signals, chosen to maximize autocorrelation properties of said synchronization sequence, wherein said N-1 predetermined signals convey packet type information to a receiver;

   inserting one of said N-1 predetermined signals after each of the first N-1 symbols in said synchronization sequence;

   encoding said synchronization sequence; and

   transmitting said encoded synchronization sequence into a channel.

2.   (original)   The method according to claim 1, wherein said predetermined signals comprise time delays or transmitting gaps.

3.   (original)   The method according to claim 1, wherein N equals seven.

4.   (cancelled)

5.   (previously amended)   The method according to claim 1, further comprising generating a plurality of synchronization sequences wherein each synchronization sequence corresponds to a unique set of N-1 predetermined signals comprising time delays, each set of N-1 time delays chosen so as to minimize cross correlation between synchronization sequences.

6. (original) The method according to claim 1, further comprising generating a plurality of synchronization sequences wherein each synchronization sequence corresponds to a different packet type.

7. (original) The method according to claim 1, wherein said each symbol comprises a zero shifted code shift keying modulated symbol.

8. (cancelled)

9. (cancelled)

10. (previously amended) A method of generating a start of packet synchronization sequence for use in a code shift keying (CSK) based transmitter, said method comprising the steps of:

generating a plurality of symbols of known shift rotation to be transmitted in said synchronization sequence;

inserting a respective predetermined time delay between each of said symbols;

encoding said synchronization sequence;

transmitting said encoded synchronization sequence onto a channel; and

wherein said respective predetermined time delays inserted between said symbols are adapted to convey packet type information to a receiver.

11. (original) The method according to claim 10, wherein said predetermined time delays are chosen to yield a synchronization sequence having relatively high auto correlation properties.

12. (cancelled)

13.   (previously amended)   A transmitter for use in a spread spectrum communications system, comprising:

a synchronization sequence generator adapted to generate a synchronization sequence, said synchronization sequence representing a plurality of synchronization symbols with predetermined time delays inserted therebetween;

an encoder adapted to determine shift indices to be applied to spreading waveforms, said shift indices determined based on said synchronization sequence;

a spreading waveform generator adapted to generate spreading waveform signals in accordance with said shift indices; and

wherein delays between spreading waveform signals are determined by said predetermined time delays in said synchronization sequence.

14.   (original)   The transmitter according to claim 13, further comprising a synchronization sequence gap memory adapted to store a plurality of synchronization sequences, each synchronization sequence comprising a set of symbols with predefined time delays between each of said symbols.

15.   (original)   The transmitter according to claim 13, implemented in an Application Specific Integrated Circuit (ASIC).

16.   (original)   The transmitter according to claim 13, implemented in a Field Programmable Gate Array (FPGA).

17.- 22. (canceled)

23.   (previously amended) A method of generating a start of packet synchronization sequence, said method comprising the steps of:

generating a plurality of symbols to be transmitted in said synchronization sequence;

inserting specific time delays between said plurality of symbols in said synchronization sequence, wherein said synchronization sequence selected to be substantially orthogonal to other synchronization sequences;

transmitting said synchronization sequence onto a channel; and

wherein said specific time delays are adapted to convey information.

24.   (canceled)

25.   (current amended)   The method according to claim 23, wherein [[said]] said information comprises packet type information.

26.   (previously presented)   The method according to claim 23, wherein said synchronization sequence comprises seven symbols having respective time delays of [10, 6, 12, 9, 8, 5] therebetween.

27.   (previously presented)   The method according to claim 23, wherein said synchronization sequence comprises seven symbols having respective time delays of [4, 5, 14, 12, 11, 9] therebetween.

28.   (previously presented)   The method according to claim 23, wherein said synchronization sequence comprises seven symbols having respective time delays of [6, 4, 11, 13, 5, 10] therebetween.

29.   (previously presented)   The method according to claim 23, wherein said synchronization sequence comprises seven symbols having respective time delays of [8, 7, 4, 9, 5, 11] therebetween.

30.   (previously presented)   The method according to claim 23, wherein said synchronization sequence comprises seven symbols having respective time delays of [11, 5, 7, 9, 6, 6] therebetween.

31.   (previously presented)   A method of generating a start of packet synchronization sequence, said method comprising the steps of:

generating a plurality of symbols to be transmitted in said synchronization sequence;

inserting specific time delays between said plurality of symbols in said synchronization sequence, said time delays chosen to yield both a high autocorrelation function for a respective synchronization sequence and a low cross-correlation function for each pair of synchronization sequences; and

transmitting said synchronization sequence onto a channel.

32.   (previously presented)   The method according to claim 31, wherein said specific time delays are adapted to convey information.

33.   (previously presented)   The method according to claim 31, wherein said specific time delays are adapted to convey packet type.

34.   (previously presented)   The method according to claim 31, wherein said synchronization sequence comprises seven symbols having respective time delays of [10, 6, 12, 9, 8, 5] therebetween.

35.   (previously presented)   The method according to claim 31, wherein said synchronization sequence comprises seven symbols having respective time delays of [4, 5, 14, 12, 11, 9] therebetween.

36.   (previously presented)   The method according to claim 31, wherein said synchronization sequence comprises seven symbols having respective time delays of [6, 4, 11, 13, 5, 10] therebetween.

37.   (previously presented)   The method according to claim 31, wherein said synchronization sequence comprises seven symbols having respective time delays of [8, 7, 4, 9, 5, 11] therebetween.

38.   (previously presented)   The method according to claim 31, wherein said synchronization sequence comprises seven symbols having respective time delays of [11, 5, 7, 9, 6, 6] therebetween.